

**Reverse osmosis assembly for water treatment****Publication number:** DE19748997**Publication date:** 1999-05-20**Inventor:** ANDERS RUEDIGER DR (DE); MACK KARL-HEINZ (DE); FEDERL KARL (DE)**Applicant:** SCHILLING CHEMIE GMBH U PRODUK (DE)**Classification:****- international:** B01D61/02; B01D61/12; B01D61/02; (IPC1-7): C02F1/44; B01D61/02**- European:** B01D61/02; B01D61/12**Application number:** DE19971048997 19971106**Priority number(s):** DE19971048997 19971106**Abstract of DE19748997**

In a reverse osmosis assembly, a permeate return tube (40) has a valve (41) linked to a control unit (20). The tube (40) branches from a permeate tube (15) upstream of a valve (34), and discharges into the suction side of a pump (5) to an inlet tube (2) which supplies one side of a membrane module (10). A reverse osmosis assembly has a membrane module (10) supplied on one side by a fluid through a pump (5) and tube (2). The permeate side discharges via an output tube (15) to a supply point (16, 17). A valve (34) linked to a control unit (20) is located in the outlet tube (15). The tube (15) to the valve (34) incorporates a conductivity measuring cell (24), while a pressure sensor (37, 38) is positioned down-flow of the valve (34). Concentrate is removed from the membrane module (10) by a tube (25). A permeate return tube (40) has a valve (41) linked to the control unit (20). The tube (40) branches from the permeate tube (15) upstream of the valve (34), and discharges into the suction side of the pump (5) to the inlet tube (2).

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| <b>1</b> | <b>Pump</b>  | <b>Inventor:</b> BRAEUER HANS (DE)<br><b>EC:</b> F04B23/04; F04B23/08; (+1)<br><b>Publication info:</b> EP1536136 - 2005-06-01                           | <b>Applicant:</b> BRAEUER HANS (DE)<br><b>IPC:</b> F04B23/04; F04B23/08; F04B43/02 (+5)         |
| <b>2</b> | <b>Water purification device with a diaphragm unit for supplying water under high pressure</b> | <b>Inventor:</b> VALBJOERN ANDERS (DK); OLSEN PALLE (DK)<br><b>EC:</b> B01D61/06; B01D61/08; (+3)<br><b>Publication info:</b> DE10302580 - 2004-08-12    | <b>Applicant:</b> DANFOSS AS (DK)<br><b>IPC:</b> B01D61/06; B01D61/10; B01D61/12 (+5)           |
| <b>3</b> | <b>HUMIDIFIER INSTALLATION</b>   | <b>Inventor:</b> MICHELBAACH LUDWIG (DE)<br><b>EC:</b> F24F6/14<br><b>Publication info:</b> WO2004055444 - 2004-07-01                                    | <b>Applicant:</b> MICHELBAACH LUDWIG (DE)<br><b>IPC:</b> F24F6/14; F24F6/12; (IPC1-7): F24F6/14 |
| <b>4</b> | <b>REVERSE OSMOSIS SYSTEM</b>  | <b>Inventor:</b> MICHELBAACH LUDWIG (DE)<br><b>EC:</b><br><b>Publication info:</b> WO2004054691 - 2004-07-01   | <b>Applicant:</b> MICHELBAACH LUDWIG (DE)<br><b>IPC:</b> B01D61/08; B01D61/10; B01D61/12 (+4)   |
| <b>5</b> | <b>DUAL HEAD PUMP DRIVEN MEMBRANE SYSTEM</b>   | <b>Inventor:</b> HERRINGTON RODNEY E (US); HAND FRANK R (US)<br><b>EC:</b> B01D61/06; B01D61/10; (+7)<br><b>Publication info:</b> EP1453592 - 2004-09-08 | <b>Applicant:</b> MIOX CORP (US)<br><b>IPC:</b> B01D61/06; B01D61/10; B01D61/12 (+20)           |
| <b>6</b> | <b>Reverse osmosis plant</b>   | <b>Inventor:</b> MICHELBAACH LUDWIG (DE)<br><b>EC:</b> B01D61/08; B01D61/10; (+1)<br><b>Publication info:</b> EP1240938 - 2002-09-18                     | <b>Applicant:</b> MICHELBAACH LUDWIG (DE)<br><b>IPC:</b> B01D61/08; B01D61/10; B01D61/12 (+6)   |

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DE 197 48 997, column 5, lines 12 to 34:

In the membrane module 10 permeate is generated that is supplied to the hydraulic accumulator 21 through the permeate pipe 15. The permeate quality is measured by means of the second conductivity measuring cell 24 and a corresponding signal is sent to the control device 20. If the permeate quality does not correspond to the predetermined requirements, the valve 34 is closed by means of the valve actuator 35, and at the same time the valve 41 is opened by means of the valve actuator 42, so that the permeate with the insufficient quality can be led to the suction side of the pump 5 through the permeate return pipe 40.

When the conductivity measuring cell 24 determines that the quality of the permeate corresponds to the requirements, the valve 41 is closed and at the same time the valve 34 is opened, so that permeate is supplied to the hydraulic accumulator 21. Depending on the consumption requirements of one of the consumers 16 or 17 one of the valves 18 or 19, respectively, is opened and permeate from the permeate pipe 15 is supplied to the consumers 16, 17. If the amount consumed is smaller than the amount of permeate produced in the membrane module 10, a pressure increase occurs in the hydraulic accumulator 21, in which thus a predetermined amount of the permeate is available in a predetermined pressure range.

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